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L8: Entry 6 of 11   File: USPT   Nov 9, 1999

US-PAT-NO: 5979757
DOCUMENT-IDENTIFIER: US 5979757 A

TITLE: Method and system for presenting item information using a portable data terminal

DATE-ISSUED: November 9, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tracy; William X.	Floral Park	NY		
Roslak; Thomas K.	Eastport	NY		
Murrah; Judith	St. James	NY		
Riso; Francis	Setauket	NY		
Beach; Robert	Los Altos	CA		
Sandler; Robert	Holtsville	NY		
Klein; John	Morgan Hill	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Symbol Technologies, Inc.	Holtsville	NY			02

APPL-NO: 08/ 771463   [PALM]
DATE FILED: December 20, 1996

PARENT-CASE:
RELATED APPLICATIONS This application is a continuation-in-part of U.S. patent application Ser. No. 08/706,579 entitled "DEVICE AND METHOD FOR SECURE DATA UPDATES IN A SELF-CHECKOUT SYSTEM" filed on Sep. 5, 1996, currently pending, and is related to pending United States patent application entitled "INTRANET SCANNING TERMINAL SYSTEM" filed on Dec. 20, 1996.

INT-CL: [06] G06 K 7/10

US-CL-ISSUED: 235/383; 235/472.01, 235/385, 705/27, 186/56
US-CL-CURRENT: 235/383; 186/56, 235/385, 235/472.01, 705/27

FIELD-OF-SEARCH: 235/383, 235/472, 235/385, 235/472.01, 705/708, 705/410, 705/16, 705/27, 705/26, 186/52, 186/56, 186/61

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

PAT-NO	ISSUE DATE	PATENTEE-NAME	US-CL
4628193	December 1986	Blum	235/375
4766295	August 1988	Davis et al.	235/383
4882724	November 1989	Vela et al.	364/401
5186281	February 1993	Jenkins	186/55
5221838	June 1993	Gutman et al.	235/379
5250789	October 1993	Johnsen	235/383
5310997	May 1994	Roach et al.	235/375
5334821	August 1994	Campo et al.	235/380
5345071	September 1994	Dumont	235/383
5361871	November 1994	Gupta et al.	235/383
5393965	February 1995	Bravman et al.	235/383
5397882	March 1995	Van Solt	235/381
5418713	May 1995	Allen	364/403
5420606	May 1995	Begum et al.	345/156
5434394	July 1995	Roach et al.	235/375
5448471	September 1995	Deaton et al.	364/401
5457307	October 1995	Dumont	235/383
5463209	October 1995	Figh et al.	235/383
5467474	November 1995	Ackerman et al.	395/800
5468942	November 1995	Oosterveen et al.	235/383
5478989	December 1995	Shepley	235/375
5493107	February 1996	Gupta et al.	235/383
5539393	July 1996	Barford	340/825.52
5557088	September 1996	Shimizu et al.	235/383
5583487	December 1996	Ackerman et al.	340/825.35
5595264	January 1997	Trotta, Jr.	235/383
5619416	April 1997	Kosarew	364/478.13
5679943	October 1997	Schultz et al.	235/472
5751257	May 1998	Sutherland	345/2

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
619662A2	March 1994	EP	
697793A2	February 1996	EP	
744856A2	November 1996	EP	
9002296	October 1990	NL	
WO90/16033	December 1990	WO	

OTHER PUBLICATIONS

The Wireless Store, The Strategic Enviroment for Retailing's Future (Symbol Technologies Brochure) Jan. 1992, p. 15.

ART-UNIT: 286

PRIMARY-EXAMINER: Hajec; Donald

ASSISTANT-EXAMINER: Rodriguez; Douglas X.

ATTY-AGENT-FIRM: Premutico; Mauro

ABSTRACT:

The present invention relates to an improved portable shopping system. The system is provided with improved data presentation system for presenting customer desired data on a portable terminal. The portable terminal includes audio as well as video presentation means which are used to provide customer specific marketing files to promote the sale of identified items.

16 Claims, 14 Drawing figures

L8: Entry 7 of 11   File: USPT   Sep 9, 1997

US-PAT-NO: 5665953
DOCUMENT-IDENTIFIER: US 5665953 A

TITLE: Self-contained personal data collector for redeeming coupons

DATE-ISSUED: September 9, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mazzamuto; Anthony	Tarzana	CA		
Lozano; Ricardo L.	Sherman Oaks	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Lobar Code Inc.					02

APPL-NO: 08/ 601265   [PALM]
DATE FILED: February 14, 1996

INT-CL: [06] G06 K 15/00

US-CL-ISSUED: 235/383; 235/375, 235/487
US-CL-CURRENT: 235/383; 235/375, 235/487

FIELD-OF-SEARCH: 235/375, 235/383, 235/487

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

PAT-NO	ISSUE DATE	PATENTEE-NAME	US-CL
5008519	April 1991	Cunningham et al.	
5047614	September 1991	Bianco	
5091634	February 1992	Finch et al.	
5128520	July 1992	Rando et al.	
5185695	February 1993	Pruchnicki	
5192854	March 1993	Counts	
5208445	May 1993	Nahar et al.	
5380991	January 1995	Valencia et al.	
5399844	March 1995	Holland	
5401946	March 1995	Weinblatt	
5420606	May 1995	Begum et al.	
5430558	July 1995	Sohaei et al.	
5581064	December 1996	Riley et al.	235/383

ART-UNIT: 254

PRIMARY-EXAMINER: Pitts; Harold

ATTY-AGENT-FIRM: Zarrabian; Michael

ABSTRACT:

A self-contained personal data collector for redeeming product coupons having product code information in machine-readable form thereon, the data collector comprising: (a) a first memory device containing a product coupon list having a plurality of entries, each entry including product code information for a product; (b) a scanner for scanning machine-readable product code information from a coupon; (c) a comparator for comparing the scanned product code information with the entries of the product coupon list in the first memory device to find a match; (d) a display for displaying the matched product code information; (e) means for assigning a unique identifier to the matched product code information; and (f) a second memory device for storing a list of matched product code information and corresponding unique identifiers as individual item entries, wherein the item entries can be retrieved and tallied by a register at a product purchase location.

28 Claims, 11 Drawing figures

L8: Entry 8 of 11   File: USPT   Jun 17, 1997

US-PAT-NO: 5640002
DOCUMENT-IDENTIFIER: US 5640002 A

TITLE: Portable RF ID tag and barcode reader

DATE-ISSUED: June 17, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruppert; Jonathan Paul	Morgan Hill	CA	95037	
Fish; Ronald Craig	Morgan Hill	CA	95037	
Yap; Thomas Allan	San Jose	CA	95132	
Ames; Ronald Merle	Aurora	CO	80014	

APPL-NO: 08/ 515257   [PALM]
DATE FILED: August 15, 1995

INT-CL: [06] G06 K 7/10

US-CL-ISSUED: 235/472; 235/462, 235/383, 235/492, 235/493
US-CL-CURRENT: 235/462.46; 235/383, 235/472.02, 235/492, 235/493

FIELD-OF-SEARCH: 235/472, 235/380, 235/462, 235/383, 235/382, 235/435, 235/492, 235/493

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | Search ALL |

	PAT-NO	ISSUE DATE	PATENTEE-NAME	US-CL
☐	4857716	August 1989	Gombrich et al.	235/472 X
☐	4970379	November 1990	Danstrom	235/472 X
☐	5047615	September 1991	Fukumoto et al.	235/472 X
☐	5059951	October 1991	Kaltner	235/383 X
☐	5151684	September 1992	Johnsen	340/572
☐	5221838	June 1993	Gutman et al.	235/472 X
☐	5227614	July 1993	Danielson et al.	235/462 X
☐	5250789	October 1993	Johnsen	235/383
☐	5280159	January 1994	Schultz et al.	235/382
☐	5293424	March 1994	Holtey et al.	235/380 X
☐	5317330	May 1994	Everett et al.	343/867
☐	5324922	June 1994	Roberts	235/472 X
☐	5340973	August 1994	Knowles et al.	235/472
☐	5381137	January 1995	Ghaem et al.	340/572
☐	5406063	April 1995	Jelen	235/472
☐	5408077	April 1995	Campo et al.	235/383 X
☐	5412192	May 1995	Hoss	235/380
☐	5424524	June 1995	Ruppert et al.	235/462
☐	5434572	July 1995	Smith	342/44
☐	5442704	August 1995	Holtey	235/380 X
☐	5444223	August 1995	Blama	235/435
☐	5468947	November 1995	Danielson et al.	235/472
☐	5479172	December 1995	Smith et al.	342/51
☐	5513261	April 1996	Maher	235/380 X
☐	5517194	May 1996	Carroll et al.	342/50
☐	5528222	June 1996	Moskowitz et al.	340/572
☐	5550547	August 1996	Chan et al.	342/42

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0199252	October 1986	EP	
0355355	February 1990	EP	
2667183	March 1992	FR	
60-69772	April 1985	JP	
9120058	December 1991	WO	

ART-UNIT: 254

PRIMARY-EXAMINER: Hajec; Donald T.

ASSISTANT-EXAMINER: ●; Michael G. ●

ABSTRACT:

A <u>portable barcode</u> and RF ID tag reader that gathers information about items to be <u>purchased</u> etc by reading <u>barcodes</u> or RF ID tags. A store host computer gathers information about <u>items to be purchased from the portable barcode/ID</u> Tag readers and then the <u>items</u> are bagged by the customer at the <u>checkout</u> stand or by employees of the store at the <u>checkout</u> stand or in a separate warehouse from which the customer <u>picks up</u> the order. The <u>portable barcode/RF</u> ID tag reader can also be used in authenticating articles by accessing a factory computer using a serial number for the article <u>scanned</u> from an RF ID tag on the article. The <u>portable barcode/RF</u> ID tag reader is comprised of a microprocessor coupled to a bar code reader, an RF ID tag reader, a spread spectrum RF transceiver, a communication port, an audible feedback device, a touchscreen or light pen and display, a thermal printer and a magnetic stripe card reader and a smart card reader.

11 Claims, 64 Drawing figures

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L8: Entry 9 of 11   File: USPT   Jan 21, 1997

US-PAT-NO: 5595264
DOCUMENT-IDENTIFIER: US 5595264 A

TITLE: System and method for automated shopping

DATE-ISSUED: January 21, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Trotta, Jr.; Frank P.	Greenwich	CT	06830	

APPL-NO: 08/ 294016   [PALM]
DATE FILED: August 23, 1994

INT-CL: [06] A47 F 9/04

US-CL-ISSUED: 186/56; 186/61, 235/383
US-CL-CURRENT: 186/56; 186/61, 235/383

FIELD-OF-SEARCH: 186/52, 186/55, 186/56, 186/61, 235/381, 235/383, 235/472

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | Search ALL |

	PAT-NO	ISSUE DATE	PATENTEE-NAME	US-CL
☐	3532184	October 1970	Blake	
☐	3716697	February 1973	Weir	
☐	3737631	June 1973	Harris	
☐	3746130	July 1973	Bullas	
☐	3836755	September 1974	Ehrat	
☐	3920100	November 1975	Dunphy	
☐	4373133	February 1983	Clyne et al.	235/383
☐	4509123	April 1985	Vereen	
☐	4578571	March 1986	Williams	235/472
☐	4803348	February 1989	Lohrey et al.	235/381
☐	4814592	March 1989	Bradt et al.	235/381
☐	4929819	May 1990	Collins, Jr.	235/383
☐	5013896	May 1991	Ono et al.	235/381
☐	5047614	September 1991	Bianco	235/385
☐	5101098	March 1992	Naito	235/379 X
☐	5186281	February 1993	Jenkins	186/55
☐	5345071	September 1994	Dumont	235/472 X
☐	5361871	November 1994	Gupta et al.	186/52
☐	5397882	March 1995	Van Solt	235/381
☐	5408077	April 1995	Campo et al.	235/383 X
☐	5468942	November 1995	Oosterveen et al.	186/52 X

ART-UNIT: 317

PRIMARY-EXAMINER: Bartuska; F. J.

ATTY-AGENT-FIRM: Banner & Witcoff, Ltd.

ABSTRACT:

A system and method of automated shopping, including a portable bar code scanner for scanning bar code indicia information on items selected to be purchased, securing the scanner in a holder for limited access, and releasing the portable bar code scanner upon receiving an authorized payment card. A plurality of items for purchase are displayed in a store such that a customer can select an item to be purchased from the store display. The customer scans the bar code indicia on the selected item from the store display. The payment card is debited for the purchase price of the selected item and then returned to the customer.

13 Claims, 5 Drawing figures

L8: Entry 10 of 11   File: USPT   Jun 13, 1995

US-PAT-NO: 5424524
DOCUMENT-IDENTIFIER: US 5424524 A

TITLE: Personal scanner/computer for displaying shopping lists and scanning barcodes to aid shoppers

DATE-ISSUED: June 13, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruppert; Jonathan P.	Morgan Hill	CA	95037	
Fish; Ronald C.	Morgan Hill	CA	95037	

APPL-NO: 08/ 082257   [PALM]
DATE FILED: June 24, 1993

INT-CL: [06] G06 K 7/10, G06 K 15/00

US-CL-ISSUED: 235/462; 235/383, 364/402, 364/709.02
US-CL-CURRENT: 705/8; 235/383, 235/462.13, 235/462.46, 705/17, 705/23, 705/28, 708/132

FIELD-OF-SEARCH: 235/383, 235/462, 364/401, 364/402, 364/403, 364/709.02, 364/710.02

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | Search ALL |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3983573	September 1976	Ishihara	357/24
☐	4071740	January 1978	Gogulski	235/431
☐	4973952	November 1990	Malec et al.	34/825
☐	5187354	February 1993	Bengtsson	235/472
☐	5221838	January 1993	Gutman	235/379
☐	5250789	October 1993	Johnsen	235/383

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
9002296	May 1992	NL	

OTHER PUBLICATIONS

"Model BHC5532 Bar C⬤ Reader", Densei, Nippon Elect⬤ Industry Co., Ltd.
"NPD Néilsen Reshapes The Future of Home-Based Market Research ", Real-Times, vol. 3, Nov. 2, 1991 p. 1.
"PTCs Speed POS Conversions At Woolworth Corporation", Real-Times, vol. 3, No. 2, 1991 p. 6.
"Telxon Touch-Screen Technology Captures Customers' Approval", Real-Times, vol. 3, No. 2, 1991 p. 6.
"Device may let supermarkets bag checkout lines", San Jose Mercury News, Business, Oct. 12, 1993 p. 1.
"Check it our-yourself", San Francisco Examiner, Sunday Jan. 10, 1993, p. E-16.
"Point of Sale; POS hardware wizardry comes to market", Automatic I.D. News, Jan. 1994, p. 50.

ART-UNIT: 254

PRIMARY-EXAMINER: Hajec; Donald

ASSISTANT-EXAMINER: Frech; Karl D.

ATTY-AGENT-FIRM: Fish; Ronald Craig Falk, Vestal & Fish

ABSTRACT:

A personal bar code scanning device for aiding shoppers in keeping track of their expenditures and speeding the process of check-out and taking advantage of coupons. A microprocessor coupled to a bar code reader, a communication port, an audible feedback device and a touchscreen or light pen and display combination carrys out bar code scanning in a store as a shopper shops. The user selects a shopping list from a collection of one or more shopping lists or creates a new list from a database or by spelling out the items to purchase on a keyboard. The user then downloads the store's current price list by modem or by connecting to the store computer when the store is entered. When the shopper wishes to purchase an item, the personal bar code scanning device is placed adjacent to the bar code on the package of the item and the user presses a button to scan the bar code. The bar code is then imaged by a CCD device, and the pattern of light and dark bars is decoded into an ASCII string which is stored in memory and compared to the current shopping list and the current price list. When a match is found, the display is changed to indicate the item scanned has been put in the basket. The price of the item is then added to the running total. In some embodiments, when the price list is downloaded, there is automatically downloaded a coupon list of items currently on sale. When an item is scanned, the ASCII identification string is compared to the coupon list, and, if a match is found, the discount from the coupon is automatically applied before updating the running total. In some embodiments, a magnetic security strip is used next to the bar code. The personal bar code scanner includes a pair of permanent magnets or electromagnets to generate a D.C. or nonvarying magnetic field which can envelope the magnetic security strip to deactivate it when an item has been scanned. This prevents the item from setting off security alarms when passing a security device at a store exit. In some embodiments, the Personal Scanner.TM. device is mounted on a shopping cart for use by user's who do not own their own devices.

22 Claims, 15 Drawing figures

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Search Results - Record(s) 1 through 10 of 11 returned.

☐ 1. Document ID: US 6325292 B1

L8: Entry 1 of 11   File: USPT   Dec 4, 2001

US-PAT-NO: 6325292
DOCUMENT-IDENTIFIER: US 6325292 B1

TITLE: Card system and methods utilizing collector cards

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC |
| Draw Desc | Image |

☐ 2. Document ID: US 6168079 B1

L8: Entry 2 of 11   File: USPT   Jan 2, 2001

US-PAT-NO: 6168079
DOCUMENT-IDENTIFIER: US 6168079 B1

TITLE: Customer information terminal system with a docking member for a data collection device

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC |
| Draw Desc | Image |

☐ 3. Document ID: US 6091956 A

L8: Entry 3 of 11   File: USPT   Jul 18, 2000

US-PAT-NO: 6091956
DOCUMENT-IDENTIFIER: US 6091956 A

TITLE: Situation information system

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC |
| Draw Desc | Image |

☐ 4. Document ID: US 6084528 A

L8: Entry 4 of 11   File: USPT   Jul 4, 2000

US-PAT-NO: 6084528
DOCUMENT-IDENTIFIER: US 6084528 A

TITLE: Intranet scanning terminal system

5. Document ID: US 6021392 A

L8: Entry 5 of 11   File: USPT   Feb 1, 2000

US-PAT-NO: 6021392
DOCUMENT-IDENTIFIER: US 6021392 A

TITLE: System and method for drug management

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |

| Draw Desc | Image |

6. Document ID: US 5979757 A

L8: Entry 6 of 11   File: USPT   Nov 9, 1999

US-PAT-NO: 5979757
DOCUMENT-IDENTIFIER: US 5979757 A

TITLE: Method and system for presenting item information using a portable data terminal

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |

| Draw Desc | Image |

7. Document ID: US 5665953 A

L8: Entry 7 of 11   File: USPT   Sep 9, 1997

US-PAT-NO: 5665953
DOCUMENT-IDENTIFIER: US 5665953 A

TITLE: Self-contained personal data collector for redeeming coupons

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |

| Draw Desc | Image |

8. Document ID: US 5640002 A

L8: Entry 8 of 11   File: USPT   Jun 17, 1997

US-PAT-NO: 5640002
DOCUMENT-IDENTIFIER: US 5640002 A

TITLE: Portable RF ID tag and barcode reader

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |

| Draw Desc | Image |

L8: Entry 9 of 11   File: USPT   Jan 21, 1997

US-PAT-NO: 5595264
DOCUMENT-IDENTIFIER: US 5595264 A

TITLE: System and method for automated shopping

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC |
| Draw Desc | Image |

☐ 10.   Document ID: US 5424524 A

L8: Entry 10 of 11   File: USPT   Jun 13, 1995

US-PAT-NO: 5424524
DOCUMENT-IDENTIFIER: US 5424524 A

TITLE: Personal scanner/computer for displaying shopping lists and scanning barcodes to aid shoppers

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | | KWIC |
| Draw Desc | Image |

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Previous Page   Next Page

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L8: Entry 11 of 11   File: USPT   Jun 11, 1991

US-PAT-NO: 5023929
DOCUMENT-IDENTIFIER: US 5023929 A
** See image for Certificate of Correction **

TITLE: Audio frequency based market survey method

DATE-ISSUED: June 11, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Call; James	Larchmont	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
NPD Research, Inc.	Port Washington	NY			02

APPL-NO: 07/ 245739   [PALM]
DATE FILED: September 15, 1988

INT-CL: [05] H04B 17/00, H04N 7/10

US-CL-ISSUED: 455/2; 358/84
US-CL-CURRENT: 725/14; 725/9

FIELD-OF-SEARCH: 455/2, 358/84, 358/86, 364/900, 379/92, 381/58, 369/7

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | | Search ALL |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4230990	October 1980	Lert, Jr. et al.	455/2
☐	4546382	October 1985	McKenna et al.	455/2
☐	4603232	July 1986	Kurland et al.	379/92
☐	4618995	October 1986	Kemp	455/2
☐	4695879	September 1987	Weinblatt	455/2

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2555383	May 1985	FR	455/2

PRIMARY-EXAMINER: Eisenzopf; Reinhard J.

ASSISTANT-EXAMINER: Charouel; Lisa

ATTY-AGENT-FIRM: Bryan, Cave, McPheeters & McRoberts

ABSTRACT:

A method for obtaining audience preference market survey data, such as a radio and/or television listening audience survey and/or supplemental data, such as bar coded data (156), from a plurality of diverse locations for accumulative processing by a remote data processor, involves recording (22, 30, 40, 42, 44, 56, 54, 52) a plurality of audio signals (46, 48, 50) at each of the diverse locations which corresponds to the ambient radio and/or television audio sound at predetermined synchronized discrete sampling times (42, 60, 64, 66, 62) or windows which are synchronized to a master recording (110) of the programs being surveyed. The sampling windows are of short duration with respect to the measurement interval. The master recording (110) audio signals frequency intervals are matched against the frequency of the diverse location audio samples to provide an indication of audience preference and tested for a correct match in a configurable filter array (120, 122, 124). Respondents at the diverse locations may be provided with portable tape recorders (30) which are automatically activated at synchronized clock times to obtain the audio samples. Bar code scanning information (150, 24) may also be provided in the form of audio signals by using the scanning signal (152) to drive a voltage controlled audio oscillator (160).

46 Claims, 18 Drawing figures